

REMARKS/ARGUMENTS

The present application has been carefully reviewed in light of February 3, 2005 Office Action. In response, claims 173 - 189 which were subject to restriction have been canceled. Moreover, claims 3, 4, 62, 79, 103, 104 and 230 have been canceled. Various other claims, as will be more fully described herein, have been amended or added to the application. Applicant respectfully requests reexamination and reconsideration of the application.

CLAIM REJECTIONS

Claims 1-4, 18, 26, 53, 190, 197, 198 and 208 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,905,627 to Brendel et al. Moreover, claims 27, 52, 60-62, 73, 74, 81, 101, 102, 112, 113, and 138 were rejected under 35 U.S.C. § 103(a) as being obvious over Brendel et al. '627 in view of U.S. Patent No. 6,529,103 to Brendel et al.

In response, Applicant has amended claim 1 such that "an inductor having a surface bonded to an adjacent surface of the capacitor with a non-conductive material" is recited. Applicant respectfully submits that such is not disclosed in the '627 patent.

The '627 patent discloses (such as in column 9, lines 24-34, and FIGS. 16, 19, 20 and 21) a feedthrough filter capacitor assembly including an optional ferrite bead disc inductor positioned immediately adjacent to the feedthrough filter capacitor within the conductive ferrule. An insulative epoxy fill is provided to capture the inductor within the conductive ferrule. Applicant notes that in all instances, the epoxy fill substantially encompasses both the capacitor and the inductor within the cavity of the ferrule.

A clear distinction between '627 patent and present invention is that this large mass of epoxy surrounding the inductor and capacitor simply does not work. The thermal coefficient of an epoxy never matches the thermal coefficient of the ceramic capacitor very well. Feedthrough capacitors are generally constructed of barium titanate ceramic. Accordingly, a large mass of epoxy, as shown in the figures of the '627 patent, tends to induce microfracturing in the ceramic capacitor, the inductor or both.

In contrast, the present invention bonds adjacent surfaces of the capacitor and the inductor. By co-bonding the capacitor and inductor along only opposite adjacent surfaces, the thermal coefficient differences and resulting microfracturing are minimized. Instead, the capacitor and inductor form a structure which acts as a beam with an increased moment of inertia. This greatly strengthens the overall structure, and enables the capacitor to be made much thinner.

Whereas the '627 teachings require that the capacitor and associated inductor be both embedded within an overall surrounding ferrule cavity, with its attendant thermal coefficient and microcracking disadvantages, the present invention does not require such a design, and instead enables the capacitor and inductor to be surface mounted.

As the '627 patent discloses epoxy generally poured into a cavity, and substantially completely surrounding the feedthrough capacitor, inductor and all spaces therein to form a cosmetic and moisture barrier, and the present invention is directed to an inductor and capacitor having only adjacent surfaces bonded to one another, as recited in claim 1, Applicant respectfully submits that amended claim 1 is not anticipated by the '627 patent.

New claim 271 recites that the non-conductive bonding material comprises a washer. New claim 272 recites that the washer comprises a thin film, adhesive-backed washer. New claim 273 recites that the non-conductive material comprises polyimide. A polyimide washer has been found to be ideal in that it can be relatively easily placed between the inductor and the capacitor, and forms a ring molecule which tends to be stress relieving. This, of course, is important in protecting the otherwise brittle capacitor. The '627 patent simply does not disclose a polyimide material, such as a thin film, adhesive-backed washer, disposed between the inductor and the capacitor.

Accordingly, applicant respectfully submits that independent claim 1, and its dependent claims (2, 6, 18, 19, 26-39, 42-59 and 271-273) are in condition for allowance.

Objected to claim 5 has been amended so that it incorporates the recitations of original claim 1, and thus is in condition for allowance. Accordingly, dependent claim 6 is also in condition for allowance.

Objected to claim 7 has been amended to include the recitations of claim 1, and thus it is in condition for allowance. Accordingly, dependent claims 8 and 9 are in condition for allowance as well.

Objected to claim 10 has been amended to include the recitations of original claim 1, and thus it is in condition for allowance. Accordingly dependent claims 11 and 12 are in condition for allowance.

Objected to claim 13 has been amended to include the recitations of original claim 1, and thus it is in condition for allowance. Accordingly, dependent claims 14-17 and 20-25 are in condition for allowance.

Objected to claim 40 has been combined with the recitations of original claim 1 and thus is in condition for allowance.

Objected to claim 41 has been amended to include the recitations of original claim 1, and thus it is in condition for allowance.

Independent claim 60 has been amended to include the recitations of objected to claim 79, and thus it is in condition for allowance. Accordingly, dependent claims 61, 63-78, 80-100 and 274 are in condition for allowance as well.

Independent claim 101 has been amended to include the recitations of objected to claim 103, and thus it is in condition for allowance. Accordingly, claims 102, 104-143 and 275 are in condition for allowance as well.

Claims 144-172 were allowed in the above-identified Office Action.

Independent claim 190 has been amended to include the recitations of objected to claim 230, and thus is in condition for allowance. Claims 191-229 are thus also in condition for allowance.

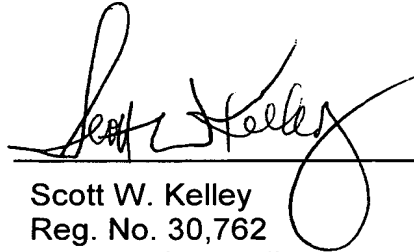
Objected to claim 231 has been amended to include the recitations of independent claim 190 and thus is in condition for allowance. New claims 232-270 (representing claims 191-229) are also in condition for allowance.

From the foregoing, Applicant respectfully asserts that the currently pending claims 1-2, 5-61, 63-78, 80-102, 105-172, 190-229, and 231-275 are in condition for allowance, notice of which is hereby requested.

Respectfully submitted,

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